Part 1

Skill Review 3

RATEQ1.tex

Exercise 1 *Solve for x.*

$$\frac{3x}{x+1} - 2 = 0$$

$$x = \boxed{2}$$

RATEQ2.tex

Exercise 2 *Simplify the equation.*

$$\frac{3}{x+1} + \frac{2}{x} = 0$$

$$\frac{\boxed{5x+2}}{x(x+1)} = 0$$

RATEQ3.tex

Exercise 3 *Simplify the equation.*

$$\frac{x+1}{x} + \frac{2x}{x+3} = 0$$

$$\frac{\boxed{3x^2+4x+3}}{x(x+3)} = 0$$

RATEQ4.tex

Exercise 4 *Evaluate $f(5a+1)$ for the following function.*

$$f(x) = \frac{3}{x} + 1$$

$$f(5a+1) = \frac{\boxed{5a+4}}{5a+1}$$

RATEQ5.tex

Exercise 5 *Evaluate $f(\frac{2}{b+1})$ for the following function.*

$$f(x) = \frac{3}{x} + 1$$

$$f(\frac{2}{b+1}) = \frac{\boxed{3b+5}}{2}$$

POLY1.tex

Exercise 6 *Combine the polynomials and simplify.*
$f(x) = ((2x^3 + x + 5) - (3x^3 + x^2 + 3x - 2)) + (x^3 + 2x + 2)$
$f(x) = \boxed{0}x^3 + \boxed{1}x^2 + \boxed{0}x + \boxed{9}$

POLY2.tex

Exercise 7 *Combine the polynomials and simplify.*
$f(x) = \frac{2}{3}x(x+4)(x+1)(\sqrt{2}x-1)^2$
$f(x) = \boxed{0}x^6 + \boxed{\frac{4}{3}}x^5 + \boxed{\frac{20-4\sqrt{2}}{3}}x^4 + \boxed{\frac{18-20\sqrt{2}}{3}}x^3 + \boxed{\frac{10-16\sqrt{2}}{3}}x^2 + \boxed{\frac{8}{3}}x + \boxed{0}$

POLY3.tex

Exercise 8 *Simplify the polynomial.*
$f(x) = (\sqrt{2}x - \sqrt{3})^2$
$f(x) = \boxed{2}x^2 + \boxed{\sqrt{6}}x + \boxed{3}$

POLY4.tex

Exercise 9 *Multiply the polynomial and simplify.*
$f(x) = (\frac{3}{5}x - \frac{4}{7})(\frac{2}{3}x + \frac{5}{6})$
$f(x) = \boxed{\frac{2}{5}}x^2 + \boxed{\frac{9}{42}}x + \boxed{-\frac{20}{42}}$

POLY5.tex

Exercise 10 *Multiply the polynomial and simplify.*
$f(x) = (x^3 - \frac{3}{4}x)(\sqrt{2} - \frac{1}{7}x^2)$
$f(x) = \boxed{-\frac{1}{7}}x^5 + \boxed{0}x^4 + \boxed{\sqrt{2} - \frac{3}{28}}x^3 + \boxed{0}x^2 + \boxed{-\frac{3\sqrt{2}}{4}}x + \boxed{0}$
